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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

PEZZUTO, HELEN LEE

| ART UNIT | PAPER NUMBER |
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1713

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/670,478 | Applicant(s) LION ET AL. | |
| | Examiner Helen L. Pezzuto | Art Unit 1713 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-121 is/are pending in the application.
- 4a) Of the above claim(s) 36-71 and 90-121 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 and 72-89 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-121 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment to claims 4, 6, 19, and 21 filed in the response on 12/9/05 is acknowledged. Regarding claims 10 and 29, the examiner suggests to insert "vinyl" before "alcohol", as applicant has asserted in the response that "vinyl alcohol" is the intended term. The 112 2nd rejection pertaining to claims 6 and 21 is withdrawn in response to applicant's amendment.

Election/Restrictions

1. This application contains claims 36-71, and 90-121 drawn to inventions nonelected with traverse in response filed on 5/18/05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claims 1-35, and 72-89 are currently under consideration in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

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art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-35, and 72-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galleguillos et al. (US-005) or Frechet et al. (US-855 or US-925) or JP-2002-201244 for the reasons of record.

US 6,410,005 B1 to Galleguillos et al. discloses AB block copolymer comprising a soft hydrophobic and a hard, hydrophilic blocks with two or more distinct glass transition temperatures, represented by Structures 1 and 2 (col. 4, lines 44-65). Specifically, prior art discloses a process of polymerizing a polyfunctional monomer X within the scope of the instant intermediate segment with a first ethylenically unsaturated monomer(s) to form an A block, and subsequently polymerizing a second ethylenically unsaturated monomer(s) containing at least one carboxylic acid group with the A block to form a B block and the resultant block copolymer (col. 3, lines 53-60; col. 4, lines 18-43; col. 5, lines 2-4; col. 6, line 27 to col. 7, line 57). US-005 teaches average molecular weight of the resultant block copolymer within applicants' range (col. 5,

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lines 23-29; col. 22, Table 2), having film forming property and water dispersibility (col. 6, lines 3-5). Suitable hydrophobic monomer A includes the various (meth)acrylates, (meth)acrylamides expressed in the present claims, with preferred species such as n-butyl acrylate, ethyl acrylate and 2-ethylhexyl acrylate which read on the instant low Tg monomeric species (col. 7, line 65 to col. 9, line 2). Patentees' preferred hydrophilic monomer B include ethylenically unsaturated carboxylic acid such as (meth)acrylic acid, which along with the disclosed alkyl methacrylates, clearly fall within the scope of the instant block having Tg greater than or equal to 40°C (col. 10, line 57 to col. 11, line 30). Prior art specifically disclose using mixtures of A and B monomers so as to achieve the desired balance of the resultant block polymer properties (col. 12, lines 12-15).

US 6,663,855 B2 and US 6,685,925 B2, both to Frechet et al. (reference will be made with respect to US-855) discloses a block copolymer comprising a core polymer and two or more flanking polymers, wherein at least one of the flanking polymers is a copolymer derived from two or more monomers (abstract). Specifically, prior art block copolymer may have the linear structure of $(AB)_n$ -Core,

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wherein at least one of blocks A and B comprises two or more monomers is hydrophobic and hydrophilic. Typically, component A is a hard block having a high Tg (i.e. preferably from 30 to 150°C), and component B is a soft block having a low Tg (i.e. preferably from 175 to less than 30°C) (col. 3, line 66 to col. 4, line 36). The respective monomer components made up the core and flanking polymers are selected to produce a block polymer with balanced hydrophilic/hydrophobic characteristic (col. 4, lines 55-57). Prior art discloses Mn and Mw of the respective core and flanking polymers within the claimed range. A molar ratio of the core polymer to the flanking polymer from 1:10 to 10:1 is further suggested (col. 5, lines 1-15). Suitable monomers for the core and flanking polymers are taught within the scope of the present claims (col. 7, line 6 to col. 9, line 49).

JP-2002-201244 (computer translated copy hereby provided) discloses an acrylic block copolymer having a Tg difference of between 130-200°C. Prior art discloses and exemplifies acrylic monomers, producing block with Tg less than -20°C and those of Tg of at least 70°C ([0034]). Prior

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art discloses weight average molecular weight and Mw/Mn in applicants' range ([0036], Table 1).

Prior art discussed above provide clear disclosures regarding the method and the selection of various monomers species in formation block copolymer systems having balance of hydrophilic/hydrophobic properties. The selection of hard and soft block components with differences in glass transition temperature is suggested within the scope of the present claims. Accordingly, one skilled in the art would have readily envisaged the selection of the suitable monomers having Tg differences as taught, motivated by the reasonable expectation of success in forming block copolymers with balanced hydrophilic/hydrophobic characteristics. Once the respective monomer block components are suggested with Tg consideration, the determination of their optimum proportion or workable ranges would involve only routine skill in the art. Thus, rendering obvious the present claims.

Response to Arguments

Applicant's remarks filed on 12/9/05 have been fully considered but are not found to be persuasive. The essence of applicant's argument lies in prior art of record, do not suggest an intermediate segment within block copolymer

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systems. Contrary to applicant's contention that the recited claims are directed to a triblock polymer, the claims are only limited to a block polymer containing a first and a second block linked via an "intermediate segment" comprising at least one constituent monomer from each of the first and second blocks. Accordingly, a linkage between any two blocks containing two monomers can read on the instant intermediate segment, as the recited segment is not particular limited to any block length (i.e. recurring units): Galleguillos et al. teach a $(A)_m(B)_n$ block copolymer containing a linking agent X. The specific A-X-B linkage would fall within the scope of the instant intermediate segment, as prior art A and B blocks may have permutations of soft and hard monomers. Similarly, Frechet et al. teach a block copolymer comprising a core polymer and at least two or more flanking polymers, wherein each of the core and flanking polymers may comprise a combination of two or more monomers. Furthermore, the flanking polymers may be a copolymer derived from at least one hydrophobic monomer and at least one hydrophilic monomer. Similarly, JP-2002-201244 discloses soft and hard monomers within the context of forming the high Tg and low Tg blocks. The reference exemplifies the inclusion of acrylic acid in both the A and

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B blocks. Accordingly, the examiner's position is maintained.

Double Patenting

4. Claims 1-35, and 72-89 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-101 of copending Application No. 10/670,388. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant block copolymer is encompassed by the identical block copolymer in the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claims 1-35, and 72-89 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4-31, and 43-102 of copending Application No. 11/089,210. Although the conflicting claims are not identical, they are not patentably distinct from each other because instant block copolymer is encompassed by the identical block copolymer in the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

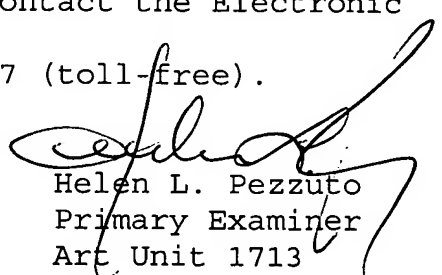
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Helen L. Pezzuto
Primary Examiner
Art Unit 1713

hlp